VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge results from the operation of a wastewater treatment facility that serves the town and surrounding commercial area. This permit action consists of updating Part I limitations, monitoring requirements and special conditions. SIC Code: 4952

1. Facility Name and Address: Town of Surry Wastewater Treatment Facility
   11463 Rolfe Highway
   Surry, VA 23883

2. Permit No. VA0061646
   Existing Permit Expiration Date: January 16, 2011

3. Owner: Town of Surry
   Owner Contact Name: Will Gwaltney
   Title: Mayor, Town of Surry
   Telephone No: (757) 294-3021
   Address: P.O. Box 314
   Surry, VA 23883

4. Application Complete Date: Administratively complete: 12/16/2010
   Technically Complete: 7/21/2011

   Permit Drafted By: Janine Howard Date: 2/8/2011
   Piedmont Regional Office
   Reviewed By: Emilee Carpenter Date: March 17, 2011
   Charlie Stitzer: Date: May 10, 2011
   Curt Linderman Date: July 5, 2011, August 5, 2011
   Kyle Winter Date: August 8, 2011

   Public Comment Period Dates: 8/31/2011 to 10/3/2011

5. Receiving Stream Name: Dark Swamp, Unnamed Tributary
   River Mile: 2-XBA000.27
   Basin: James River (Lower)
   Subbasin: NA
   Section: 1a
   Class: III
   Special Standards: None

   7-Day, 10-Year Low Flow (7Q10): 0.0 MGD
   1-Day, 10-Year Low Flow (1Q10): 0.0 MGD
   30-Day, 5-Year Low Flow (30Q5): 0.0 MGD
   30-Day, 10-Year Low Flow (30Q10): 0.0 MGD
   Harmonic Mean Flow (HM): 0.0 MGD
   Tidal? NO
   On 303(d) list? NO

   See **Attachment A**- Flow Frequency Memorandum

6. Operator License Requirements: The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collection and Treatment Regulations (SCATS) 9 VAC 25-790-300. A Class III licensed operator is required for the facility.

7. Reliability Class: Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class II Reliability for the existing facility.

8. Permit Characterization:
( ) Private ( ) Federal ( ) State (X) POTW ( ) PVOTW

( ) Possible Interstate Effect ( ) Interim Limits in Other Document

9. Provide a brief description of the wastewater treatment system.

Discharge Description

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	DESIGN FLOW
001	Residential (75%) and commercial (25%)	Bar screening, primary clarification, rotating biological contact units, secondary clarification, microfiltration, chlorination, dechlorination	0.060 MGD

The sewage treatment plant treats wastewater from approximately 500 connections, both residential and commercial, including offices and restaurants. Connections are located within the Town of Surry limits and immediately outside of the Town boundary.

See **Attachment B**- Plant Flow Diagram

10. Sewage Sludge Use or Disposal: Sludge is thickened in the clarigester and periodically pumped to the onsite sludge drying beds. Dewatered sludge is placed in metal garbage containers and taken to the Waverly Atlantic Landfill (3474 Atlantic Avenue, Waverly, VA) in Sussex County for disposal. Approximately 5 dry metric tons of sludge are disposed of by landfilling in a 365-day period. Sludge haul days are Monday through Friday between 7:00AM and 3:00PM.

See **Attachment C**- Sludge Haul Route

11. Discharge Location Description*:* This facility discharges to an unnamed tributary of Dark Swamp.

Name of USGS topographic map: Surry Quadrangle (67A)

See **Attachment D**- Topographic Map, Surry Quadrangle (67A)

12. Material Storage: Gaseous chlorine feed and dechlorination (sodium sulfite) tablets are stored undercover, inside the chlorine building.

See **Attachment E**- Site Inspection Report

13. Ambient Water Quality Information

Ambient water quality data are not used because the receiving stream flows are zero at the theoretical low flows used to determine the need for water quality based effluent limitations. For this reason effluent is assumed to comprise 100% of the instream flow and effluent data were used in place of ambient stream data to evaluate the wasteload allocations and the need for effluent limitations.

The unnamed tributary to Dark Swamp was assessed as a Category 2B water during the 2010 305(b)/303(d) Water Quality Assessment ("Waters are of concern to the state but no Water Quality Standard exists for a specific pollutant, or the water exceeds a state screening value or toxicity test.") The Fish Consumption Use is fully supporting with observed effects due to the VDH fish consumption advisory for kepone. The other designated uses were not assessed.

14. Antidegradation Review & Comments: Tier 1 __X__ Tier 2 _____ Tier 3 _____

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. The unnamed tributary to Dark Swamp is determined to be a Tier 1 waterbody due to its intermittent nature. Beneficial uses cannot be fully attained based on the intermittent nature of the stream.

15. Site Inspection: Date: August 7, 2008 Performed by: Charles Stitzer

See **Attachment E**- Site Inspection Report

16. Effluent Screening & Limitation Development:

Numeric permit limitation calculations utilize conservative low flow ambient conditions to represent circumstances in which the effluent has the greatest potential to impact the receiving stream. At the discharge point, the receiving stream is intermittent and dry during low flow conditions; therefore, a 100% mix is standard for 0.0 MGD receiving stream flows and effluent information is used to characterize the stream during low flow conditions (and in MSTRANTI). An effluent hardness value was obtained from data submitted with the permit application. The maximum average temperature value (26^{o}C) from Form 2A was assumed to be a reasonable approximation of the 90th percentile stream/effluent temperature. The 90th and 10th percentile maximum pHs were calculated using DMR data. MSTRANTI was used to determine maximum wasteload allocations (WLA) for each water quality parameter that will maintain the Water Quality Standards (WQS) in the receiving stream.

Water Quality Criteria Monitoring submitted with the application was used to screen the effluent for pollutants of concern. Pollutants that tested below the minimum Agency prescribed quantification level (QL) were considered absent for the purpose of this evaluation and no further analysis was required. Pollutants above the Agency QL, found in measureable concentrations, and those with an Aquatic Water Quality Standard were

evaluated for a reasonable potential to violate the standard, using Stats.exe and the appropriate WLA calculated by MSTRANTI.

See **Attachment F** for facility DMR data and effluent data (Water Quality Criteria monitoring) submitted with the application.

Measureable concentrations (above the minimum Agency QL) of the following pollutants were identified in the effluent: dissolved arsenic, dissolved hexavalent chromium, dissolved copper, dissolved lead, dissolved nickel, dissolved zinc, ammonia, chlorides, hydrogen sulfide, and Total Residual Chlorine (TRC). A reasonable potential analysis was performed on these parameters, resulting in copper, zinc, ammonia, and TRC permit limitations. Although dissolved cadmium was reported at a concentration of 0.2 µg/l, less than the minimum agency QL (0.3 µg/l), this parameter was present in the effluent at a quantifiable concentration and a reasonable potential analysis was performed; no limit is need.

See **Attachment G** for the MSTRANTI data source report, and printouts of the MSTRANTI and Stats.exe results.

Table 1. Basis for 0.060 MGD Effluent Limitations

PARAMETER	BASIS FOR LIMIT	DISCHARGE LIMITS			
		MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM
pH	4, 5	NA	NA	6.0 s.u.	9.0 s.u.
$cBOD_5$	1, 3	10 mg/l	15 mg/l	NA	NA
Total Suspended Solids (TSS)	1, 3	10 mg/l	15 mg/l	NA	NA
Total Kjeldahl Nitrogen (TKN)	1, 3	3.0 mg/l	4.5 mg/l	NA	NA
Ammonia (as N)	2	1.72 mg/l	1.72 mg/l	NA	NA
Dissolved Oxygen (DO)	4	NA	NA	5.0 mg/l	NA
TRC	2	0.0080 mg/l	0.0098 mg/l	NA	NA
Total Recoverable Copper	2	3.8 µg/l	3.8 µg/l	NA	NA
Total Recoverable Zinc	2	37 µg/l	37 µg/l	NA	NA
Dissolved Sulfide	3	NL	NL	NA	NA
E. coli (N/100mL) (Geometric Mean)	3	126	NA	NA	NA
(157) TRC contact tank*	3	NA	NA	1.0 mg/l	NA
(213) TRC contact tank*	3	NA	NA	0.60 mg/l	NA

1. Stream Sanitation Memorandum (4/20/1988) (**Attachment I**)
2. Water Quality Based limits
3. Best Engineering Judgment (BEJ)

4. State Water Quality Standards (effective 1/6/11)
5. Federal Effluent Guidelines for Secondary Treatment (40 CFR 133.102)

NA = Not Applicable NL = No Limit
* The compliance point for these limitations is at the outlet of the chlorine contact tank, prior to dechlorination. These samples are not final effluent (see Part I.B. Additional Chlorine Limitations and Monitoring Requirements).

a. Water Quality Based Limitations

TRC: Chlorine is a toxic pollutant purposefully introduced into the wastewater. Consequently, a reasonable potential analysis is not necessary to establish the need for a limitation. Per GM00-2011, a chlorine limitation was forced using a datum of 20,000 µg/l. The resulting limitation calculated using Stats.exe is equivalent to the TRC limit in the 2006 permit.

Ammonia: Facilities discharging treated domestic waste are known to discharge ammonia at an expected concentration of 9.0 mg/l. Per GM 00-2011 this datum was used to force an ammonia limitation. The resulting 1.72 mg/L limit is more stringent than the 2.0 mg/L limit from the 2006 permit. The TKN limitation of 3.0 mg/L is not protective of ammonia toxicity; therefore, both ammonia and TKN limitations apply. A review of the DMR and application data shows that the facility is already meeting this limitation; therefore, a Schedule of Compliance is not provided.

Total Recoverable Copper:
A reasonable potential analysis using the dissolved data reported on the permit application yielded the need for a limit in order to protect water quality against acute toxicity. The resulting 5.1 µg/L limit is less stringent than the 3.8 µg/L limit from the 2006 permit. The less stringent limit is due to a greater effluent hardness value used to calculate wasteload allocations during this reissuance. Data submitted with the application indicate an effluent hardness of 36 mg/L $CaCO_3$, versus 26 mg/L used in the previous reissuance. The 2006 permit contained a four year compliance schedule for the final copper limitation (3.8 µg/L). The facility did not perform any upgrades or install treatment equipment at the plant in order to meet the copper limitation. Violation of this limitation has resulted in enforcement action on the permittee for failure to comply with the permit limitation (see Attachment H and staff comment a.) Backsliding prevents the insertion of the 5.1 µg/L copper limitation computed during the 2011 reissuance into the permit because no treatment has been installed at the plant to remove copper. For this reason, the 2006 3.8 µg/L limitation is carried forward. See Attachment J for the 2006 limitation development documents (MSTRANTI and Stats evaluation).

Total Recoverable Zinc:
A reasonable potential analysis using the dissolved data reported on the permit application yielded the need for a limit in order to protect water quality against acute toxicity. The 49 µg/L limit is less stringent than the 37 µg/L limit from the 2006 permit. The less stringent limit is due to a greater effluent hardness value used to calculate wasteload allocations during this reissuance. Data submitted with the application indicate an effluent hardness of 36 mg/L $CaCO_3$, versus 26 mg/L used in the previous reissuance. Backsliding prevents the limit from being made less stringent; therefore, the 2006 permit limit is carried forward. The 2006 permit contained a four year compliance schedule for the zinc limitation. The permittee was able to meet the 37 µg/L zinc limitation without upgrading the plant. See Attachment J for the 2006 limitation development documents (MSTRANTI and Stats evaluation).

b. Best Engineering Judgment (BEJ)

Dissolved Sulfide:
Monitoring only is required for this parameter. In an aqueous solution, hydrogen sulfide exists in a dynamic equilibrium with other dissolved sulfides. The ratio of hydrogen sulfide to the other dissolved sulfides depends upon the pH, temperature, and specific conductivity of the solution. The hydrogen sulfide concentration of 448 µg/L reported by the permittee (see Attachment F) was derived under laboratory conditions, which may not represent conditions typically found at the treatment facility, and evaluation of the reported concentration (using MSTRANTI and STATS) indicates that limitations are needed for hydrogen sulfide. Rather than including effluent limitations in the 2011 permit, additional monitoring is proposed for dissolved sulfide in accordance with guidance in the VPDES Permit Manual (revised January 27, 2010).

E. coli:
Fecal coliform data was submitted with the application and are displayed in Attachment F. The first fecal analysis submitted with the initial application yielded a result of <2 N/100mL. The Town of Surry submitted their second and third fecal analyses to DEQ on 4/27/2011. The 3/22/11 sample result was >1600 N/100mL and the 4/21/11 sample result was 900 N/100mL. The plant operator informed DEQ that reduced detention time in the chlorine tank due to I & I within the collection basin was the cause of the high fecal results. Given the two high samples were taken a month apart, and I & I is a chronic problem for this facility, it is a possibility that inadequate disinfection may also be a persistent problem at this facility. For this reason it is DEQ's BEJ to insert a bacteriological limitation in the 2011 permit. The bacterial Water Quality Standard for Class III freshwaters is in terms of *E. coli*, therefore a monthly average *E. coli* limitation of 126 N/100mL is introduced in this permit cycle. Per the VPDES permit manual (1/27/10 edition) a compliance schedule is not afforded for this new bacteria limitation.

c. Water Quality Standards/Water Quality-Based

pH: 9 VAC 25-260-50 of the VA Water Quality Standards outlines numerical criteria for pH in Class III waters between 6.0 S.U. and 9.0 S.U.

Dissolved Oxygen (DO): In previous permit cycles, the 4/20/1988 Stream Sanitation Memorandum (Attachment I) recommendation for a 3.0 mg/L DO limitation has been used as the basis for the permit limitation. With this reissuance a permitting decision was made to utilize the numeric criteria (5.0 mg/L) for dissolved oxygen (per 9VAC25-260-50) for Class III waters. As such, the minimum dissolved oxygen limitation in the permit is 5.0 mg/L. This is a more conservative approach and ensures the protection of any potentially free-flowing areas of the receiving waters. This decision was made in coordination with Water Resources Development Staff. Based on a review of the effluent data for DO (Attachment F- DMR data), a schedule of compliance is not given for the more stringent 5.0 mg/L minimum DO limit because the facility is already consistently in compliance with the limitation.

Separate human health (HH) standards apply to waters that are designated as "Public Water Supplies (PWS)" and "all other surface waters." The receiving stream is not designated as a PWS; consequently, the HH (PWS) standards are not applicable to this discharge. However, each parameter found in the effluent at a measureable concentration or a concentration above the Agency QL is listed in Table 2, below, and compared with the applicable Human Health (PWS) standard. Radionuclides reported on the Water Quality Criteria Monitoring Form are also included.

Table 2. Human Health Evaluation

Parameter	Human Health Standard (PWS)	Effluent Concentration	Exceed Human Health Standard
Arsenic (µg/l)	10	2	NO
Total Chromium (µg/l)	100	<6	NO
Copper (µg/l)	1300	5.8	NO
Lead (µg/l)	15	0.8	NO
Nickel (µg/l)	610	1.7	NO
Zinc (µg/l)	7,400	21	NO
Chlorides (µg/l)	250,000	38	NO
Uranium	30 µg/l	< 0.7 pCi/L ≈ < 1.0 µg/l	NO
Combined Radium 226 and 228 (pCi/L)*	5	< 1.2	NO
Beta Particle & Photon Activity	4 mrem/yr	11.6 pCi/L	NO
Gross Alpha Particle Activity (pCi/L)	15	< 1.6	NO

* Note The permittee provided separate analytical results for Radium 226 and Radium 228 (0.3 pCi/L and < 0.9 pCi/L respectively). These two results were summed for a Radium result of < 1.2 pCi/L.

In the application packet, the values reported for Beta Particle and Photon Activity were in units of activity (i.e. pCi/L) whereas the applicable water quality standard is an exposure in terms of mrem/yr. The EPA has established this same standard for community potable water systems. EPA guidance states that compliance with the potable water standard may be assumed if the average annual concentration of Beta Particle and Photon Activity is less than 50 pCi/L (Radionuclides in Drinking Water: A Small Entity Compliance Guide. EPA 815-R-02-001, February 2002.; http://www.epa.gov/safewater/radionuclides/compliancehelp.html) and the average annual concentrations of tritium and strontium-90 are less than 20,000 pCi/L and 8 pCi/L, respectively. Due to lack of data for strontium-90 and tritium, a complete evaluation against the standard and unconditional determination of compliance is not possible. However, given the compliance of other radionuclides (gross alpha and total radium, shown above) with the appropriate standard, and the effluent Beta Particle & Photon Activity being less than 50 pCi/L**,** the reported concentrations of Beta Particle and Photon Activity are deemed acceptable.

Uranium concentration was reported in the application in terms of activity (pCi/L) whereas the standard is in terms of mass (µg/l). EPA has suggested conversion factors ranging from 0.67 to 1.5 pCi/µg (USEPA 2000. National Primary Drinking Water Regulations; Final Rule 65 FR 236; December 7, 2000.) The 0.67 pCi/µg conversion factor was used to provide the most conservative estimate of the mass based concentration in the effluent. This results in an estimated Uranium concentration of < 1.0 µg/l.

As indicated in Table 2, the parameters found in measurable concentrations in the effluent do not present a reasonable potential to cause or contribute to a water quality standard violation or a human health concern. No further evaluation is necessary.

17. Basis for Sludge Use & Disposal Requirements:

Not applicable, as this facility does not land apply sludge. See Item 10 for further details on sludge use and disposal.

18. Antibacksliding Statement:

No limits have been reduced or removed during this permit reissuance.

19. Compliance Schedules: None

20. Special Conditions:

Part I. B.1 & 2 : Additional Chlorine Limitations and Monitoring Requirements
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 and Water Quality Standards 9VAC25-260-170, Bacteria; other recreational waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

Part I. C.1: 95% Capacity Reopener
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits.

Part I. C.2: Indirect Dischargers
Rationale Required by VPDES Permit Regulation, 9VAC25-31-200 B 1 and B 2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

Part I. C.3: CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

Part I. C.4: O&M Manual Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9VAC25-31-190 E.

Part I. C.5: Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9VAC25-31-200 C and the Code of Virginia § 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.), require licensure of operators.

Part I. C.6: Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 for all municipal facilities.

Part I. C.7: Sludge Use and Disposal
Rationale: VPDES Permit Regulation, 9VAC25-31-100 P; 220 B 2; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

Part I. C.8: Sludge Reopener
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-220 C for all permits issued to treatment works treating domestic sewage.

Part I. C.9: Total Maximum Daily Load (TMDL) and Nutrient Reopener
Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

Part I. C.10: Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

The metals (Total Recoverable Copper and Total Recoverable Zinc) quantification levels (QLs) reflect the site specific target values (SSTV) calculated in 2006 MSTRANTI (Attachment J). The SSTVs are based on a percentage of the wasteload allocation (the lesser of 40% of the acute wasteload allocation and 60% of the chronic wasteload allocation) calculated with respect to the effluent and receiving stream conditions. The metals QLs are based on the 2006 SSTVs because the limitations are brought forward from the 2006 permit (see Item 16 discussion). The QLs for the other parameters are Agency prescribed.

Part I. C.11: Closure Plan
Rationale: Code of Virginia § 62.1-44.19 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

Part I. C.12: Materials Handling/Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

Part I. C.13. Water Quality Criteria Reopener
Rationale: VPDES Permit Regulation, 9VAC25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of water quality criteria.

Part I. D. Pretreatment Program
Rationale: VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulation.

Part II, Conditions Applicable to All Permits
Rationale: VPDES Permit Regulation, 9VAC25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes to Permit:

Changes to Permit Cover Page:
Cover page Boilerplate verbiage revised as per January 27, 2010 VPDES Permit Manual, Section MN-1. Signatory updated to reflect the October 2008 DEQ Agency Policy Statement 2-09, "Delegations of Authority" that authorizes the Water Permit Manager to sign the 2011 permit. Facility name corrected to "Town of Surry Wastewater Treatment Facility."

Table I. Changes to Part I. A Effluent Limits and Monitoring Requirements:

Parameter Changed	**Monitoring Requirement Changed**		**Effluent Limits Changed**		**Reason for Change:**
	From	To	From	To	
$cBOD_5$ Monthly Avg Weekly Avg	No change	No change	2.3 kg/d 3.4 kg/d	2300 g/d 3400 g/d	GM 06-2016; footnote b. added
TSS Monthly Avg Weekly Avg Monthly Avg Weekly Avg	No change	No change	2.3 kg/d 3.4 kg/d 10.0 mg/l 15.0 mg/l	2300 g/d 3400 g/d 10 mg/l 15 mg/l	GM 06-2016; footnote b. added
TKN Monthly Avg Weekly Avg	No change	No change	0.68 kg/d 1.0 kg/d	680 g/d 1000 g/d	GM 06-2016; footnote b. added
Ammonia (as N)	No change	No change	2.0 mg/l	1.72 mg/l	Water quality limit based on chronic toxicity.
TRC	1/Day	3/Day (at 4 hour intervals)	No change	No change	1/27/10 ed. VPDES Permit Manual (MN-2, pg.2)
Interim Total Recoverable Copper	1/Day	Deleted	5.7 µg/l	Deleted	Removed, no longer needed.
Dissolved Sulfide	---	1/6 Months	---	NL	Added, 1/27/10 edition VPDES Permit Manual (MN-3, pg. 44)
E. coli (N/100mL)	---	4/Month (10am-4pm)	---	126	BEJ- *E. coli* limitation added to permit

Dissolved Oxygen	1/Day	No change	3.0 mg/L minimum	5.0 mg/L minimum	State Water Quality Criteria for Class III receiving waters
Other Changes	**From**	**To**	**Change:**		
Footnote	a.	a.	Updated to reference Part I.C.1		
Footnote	b.	Deleted	Removed, schedule of compliance no longer needed.		
Footnote	---	b.	Added to clarify 2 significant figures per GM 06-2016.		
Footnote	---	c.	Added to reference additional TRC requirements.		
Footnote	---	d.	Added to define 1/6 months.		
Footnote	---	e.	Added to reference compliance reporting requirements.		
Footnote	---	f.	Added to define 4/Month.		
Part I.A.3	3.	3.	Revised to say effluent samples shall be collected following post-aeration.		
Part I.A.4	---	4.	85% Min. BOD_5 and TSS Removal Requirement added per the 6/28/11 VPDES PRO staff decision and the VPDES Permit Manual (1/27/10 edition)		

Table II. Changes to Permit:

From:	To:	Reason/Change:
Part I. B.	Deleted	Schedule of Compliance no longer needed.
Part I. C.	Part I. B. Additional Chlorine Limitations and Monitoring Requirements	Language update per 1/27/10 edition VPDES Permit Manual
Part I. D.1	Part I. C.1 95% Capacity Reopener	Renumbered
Part I. D.2	Part I. C.4 O&M Manual Requirement	Language update per 1/27/10 edition VPDES Permit Manual
Part I. D.3	Part I. C.5 Licensed Operator	Renumbered
Part I. D.4	Part I. C.6 Reliability Class	Renumbered
Part I. D.5	Part I. C.7 Sludge Management Plan	Renumbered; language update in accordance with GM10-2003.
Part I. D.6	Part I. C.8 Sludge Reopener	Renumbered
Part I. D.7	Part I. C.10 Compliance Reporting	Language and QLs update per 1/27/10 edition VPDES Permit Manual
Part I. D.8	Part I. C.12 Materials Handling/Storage	Language update per 1/27/10 edition VPDES Permit Manual
Part I. D.9	Part I. C.9 TMDL and Nutrient Reopeners	Revised per GM 07-2008, Amendment 2

From:	To:	Reason/Change:
Part I. D.10	Part I. C.2 Indirect Dischargers	Language updated to include reference to the DEQ Piedmont Regional Office for clarity.
Part I. D.11	Part I. C.3 CTC, CTO Requirement	Language update per 1/27/10 edition VPDES Permit Manual and GM 07-2008, Amendment 2
Part I. D.12	Part I. C.9.c TMDL and Nutrient Reopeners	Language moved to part c. of the Reopener special condition and reformatted
Part I. D.13 Water Quality Standards Testing	Deleted	WQ Standards testing data received on 7/16/2006, satisfying the special condition. Further Attachment A (WQ Criteria Monitoring) data were received as part of the 2010 application for reissuance
---	Part I. C.11 Closure Plan	Added per 1/27/10 edition VPDES Permit Manual
---	Part I. C.13 Water Quality Criteria Reopener	Added per 1/27/10 edition VPDES Permit Manual
Part I. E. Pretreatment	D. Pretreatment Program	Language update per 1/27/10 edition VPDES Permit Manual

22. Variances/Alternate Limits or Conditions: None

23. Regulation of Users: 9VAC25-31-280 B 9: Not applicable, this facility is a POTW.

24. Public Notice Information required by 9VAC25-31-280 B:

Comment period: 8/31/11- 10/3/11
Date of first publishing: 8/31/11
Date of second publishing: 9/7/11
Publishing Newspaper: *Sussex-Surry Dispatch*

All pertinent information is on file and may be inspected, and copied by contacting Janine Howard at Virginia DEQ-Piedmont Regional Office, 4949-A Cox Road, Glen Allen VA 23060, (804) 527-5046, e-mail Janine.howard@deq.virginia.gov.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit. The public may review the draft permit

and application at the DEQ office named above by appointment or may request copies of the documents from the contact person listed above.

Public Notice Comments:

On 9/20 the permit writer received an email from a citizen who had seen the mailing list posting of the public notice information. The citizen asked for the name of the receiving waterbody. On 9/21 the permit writer responded to the requester and attached the complete public notice document which contains the name of the receiving waterbody (Dark Swamp, UT in the James River watershed). No comments were received from this individual.

No public comments were received during the public comment period and no changes have been made to the permit as a result of the public comment period.

25. Additional Comments:

Previous Board Action:
Since the 2006 permit became effective the facility has experienced difficulty complying with the permit limitations for TKN, $cBOD_5$ and Total Recoverable Copper. A Warning Letter (WL) was issued 5/22/2006 and 7/10/2006 identifying violations of the permit limitations as reported on the DMRs. Notices of Violation (NOVs) were issued on 5/29/2008, 9/19/2008, 5/20/2009, and 1/4/2010 documenting permit violations for the aforementioned parameters from 2007 onward. Effective June 25, 2010 the Town of Surry entered into a Consent Order with DEQ in order to return the town to compliance. The Schedule of Compliance in Appendix A of the Order outlines the schedule of compliance and Appendix B provides interim limitations. Appendix A No. 2 requires the permittee to submit a permit application for a flow expansion and include a schedule of implementation and funding plan. The 2011 reissuance application, initially received August 30, 2010, did not include a request for an expansion tier in the permit. The facility was issued another NOV on February 17, 2011 and is actively in discussion with DEQ Enforcement staff.

The Order shall continue until Surry petitions the Director to terminate the Order after it has completed all of the requirements and the termination is approved or the Director or State Water Control Board terminate the order upon 30 days written notice to Surry.

See **Attachment H**: Order By Consent (6/25/2010)

I&I Study Results: Appendix A of the CSO required the submittal of the results of an I&I study no later than June 1, 2011. The CSO required the results of collection system inspections and a prioritized list with a schedule of rehabilitation work to be performed. The CSO requires complete corrective action to be completed by March 1, 2012. The “Town of Surry Inflow and Infiltration (I&I) Study” was received by DEQ on June 30, 2011. The I&I study involved manhole inspections, development of a base map of the collection system (existing plans of the collection system were unavailable), mainline smoke testing, flow monitoring, and CCTV inspection.

Manhole inspections identified manhole joint leaks as a pervasive infiltration problem throughout the system. Due to the depth of the collection system (8 feet or greater throughout) the smoke testing did not locate mainline defects but helped identify cleanout covers throughout the collection system that were missing or broken. Cleanout covers were replaced as needed throughout the inspection process. Twenty-four (24) manholes were identified as contributing to a large amount of inflow during wet weather. During storm events these manholes become submerged, allowing water to flow freely into the collection system via the pick holes. Grouting of the manhole lids had also failed in multiple locations.

A recommendation to install water tight manhole covers on the 24 high priority manholes was approved by the Town Council in December 2010 and at the time of submission of the I&I study results, ten water tight manhole covers had been installed.

CCTV inspection revealed deposits of sand in sections of the collection system, in some cases filling half of the pipe. CCTV inspection of the eastern part of the collection basin identified infiltration in three areas of the mainline, and it is estimated that these groundwater leaks into the system are contributing as much as 23,000gpd to the flow at the wastewater treatment plant. Flow monitoring indicated a correlation between high flows in the collection system and rain events.

A schedule of high priority repairs is outlined in Section 6.0 of the I&I study. The schedule identifies repairs to be completed throughout the remainder of 2011 including installing water tight manhole covers on all of the high priority manholes, cleaning out the sand in the eastern collection basin and preparing a scope of work for procurement of contractor services to repair the defects in the mainline of the eastern basin of the collection system. Additionally manhole joint repairs will be made, and a private housing subdivision, which maintains its own collection system that feeds into the Town maintained collection system, will be required to investigate I&I issues in their own collection system and make repairs or face surcharges. In April 2012 the Town intends to submit to DEQ a report of all high priority I&I work that has been completed, in addition to a schedule for further investigation of the collection system, particularly identification of manholes which were not located during the initial I&I study. Section 6.0 (Corrective Action Plan) is subject to DEQ Enforcement approval (as of July 22, 2011 approval is pending).

Planning Statement: This discharge is in conformance with the existing planning documents for the area (PRO, 5/11/2011).

Staff Comments:

a. Reduced monitoring was not considered due to non-compliance with the 2006 permit conditions and limitations. The facility is an active case in Enforcement and under a Consent Special Order (CSO) which became effective June 25, 2010. The CSO defines alternate $cBOD_5$, TKN, and Total Recoverable Copper limits.

b. The 2011 permit fees for this facility were paid on 8/17/2011.

c. EPA has waived the right to comment and/or object to the adequacy of the draft permit.

d. This discharge is not controversial. The facility is currently under a CSO effective June 25, 2010 due to chronic non-compliance with the $cBOD_5$, TKN, and Total Recoverable Copper limitations in the 2006 permit.

e. The facility is not a member of the Virginia Environmental Excellence Program (VEEP).

f. The permittee has applied for DEQ's e-DMR program as of January 2011. The application will be processed following this permit reissuance.

g. This facility is not subject to coverage under 9 VAC 25-151 General VPDES Permit VAR05 for Discharges of Storm Water Associated with Industrial Activity (Sector T) due to a design flow of less than 1.0 MGD.

h. The facility is not presently registered for coverage under 9 VAC 25-820-10 *et seq.* General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in

Virginia. The facility does discharge into the Chesapeake Bay Watershed, however it is considered a non-significant discharger as defined in 9 VAC 25-820-10. Non-significant discharges with individual permits in existence as of July 1, 2005 are covered by rule under the Watershed General Permit (9 VAC 25-820-10 et seq.).The facility is located downstream of the fall line and has a design capacity of less than 0.1 million gallons per day. New or expanding non-significant dischargers that trigger the offset requirements established under the Code of Virginia will be required to register and will be assigned individual allocations based on permitted design capacity or offsets upon issuance of a CTO for the expansion. The facility is listed in the Chesapeake Bay TMDL as a non-significant discharger; see Item 26 for more discussion.

Other Agency Comments:

VDH Office of Drinking Water- Letter dated January 11, 2011 states:
"There are no PWS raw water intakes located within 15 miles downstream or within one tidal cycle upstream of the existing project." VDH raised no objection to the permit reissuance.

26. 303(d) Listed Segments (TMDL):
The James River Basin is included in the Chesapeake Bay Watershed and the facility is identified as a non-significant Chesapeake Bay Watershed discharger in the Chesapeake Bay TMDL (EPA approved 12/29/2010). The facility's discharge is included in an aggregate wasteload allocation (WLA) for nitrogen, phosphorus, and sediment, assigned to the JMSOH segment of the James River. Per DEQ's Phase I Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL (11/29/2010) the non-significant TN and TP loads are considered aggregate and are not to be included in individual VPDES permits. The aggregated TN and TP loads are regulated by the Watershed Nutrient General Permit and all non-significant discharges with individual permits in existence as of July 1, 2005 are covered by rule under the permit (9 VAC 25-820-10 et seq.). Per the WIP, provided the aggregated loads for all discharges is less than the aggregate TSS load in the WIP and the individual permits contain technology-based TSS limits as necessary, the individual VPDES permits will be considered to be consistent with the TMDL. TSS is limited in this permit. The facility will neither cause nor contribute to violations of the Water Quality Standards (9 VAC 25-260 et seq., effective 1/6/11).

27. Attachments

Attachment A: Flow Frequency Memorandum
Attachment B: Plant Flow Diagram
Attachment C: Sludge Haul Route
Attachment D: Topographic Map (Surry Quadrangle 67A) and Aerial Image
Attachment E: Site Inspection Report
Attachment F: Water Quality Criteria Monitoring data, DMR data
Attachment G: MSTRANTI data source report, MSTRANTI, Stats.exe results
Attachment H: Order by Consent (effective June 25, 2010)
Attachment I: Stream Sanitation Memorandum (4/20/1988)
Attachment J: 2006 Permit MSTRANTI and Copper/Zinc limitation development